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## An annotated catalogue of the Iranian Cheloninae (Hymenoptera: Braconidae)

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**Abstract:** In the present study a catalogue of the Iranian Cheloninae (Hymenoptera: Braconidae) is given. It is based on a detailed study of all available published data. In total 48 species from 4 genera including, *Ascogaster* WESMAEL (4 species), *Chelonus* PANZER (32 species), *Phanerotoma* WESMAEL (11 species) and *Phanerotomella* SZÉPLIGETI (1 species) of two tribes (Chelonini and Phanerotomini) are presented. Three species may be endemic to the Iranian fauna, *Chelonus* (*Chelonus*) *iranicus* TOBIAS, *Chelonus* (*Chelonus*) *setaceus* PAPP and *Chelonus* (*Microchelonus*) *iranicus* TOBIAS. A faunistic list with synonyms, host records and distribution data is provided.

**Key words:** Hymenoptera, Ichneumonoidea, Braconidae, Cheloninae, catalogue, distribution, host, Iran.

### Introduction

Cheloninae is one of the large subfamilies of the family Braconidae with 1,375 described species worldwide in 15 genera (HUDDLESTON 1984; VAN ACHTERBERG 1990; HUDDLESTON & WALKER 1994; YU et al. 2012). Members of this subfamily are generally black, yellow or orange in colour, they vary in size from 1.8 - 11 mm. They are easily recognized from all other braconid subfamilies by the possession of rigid, sculptured metasomal carapace that is formed by the fusion of the first three tergites, the remaining soft parts of metasoma being concealed beneath the carapace in combination with the presence of complete postpectal carina (VAN ACHTERBERG 1990). All members of the subfamily Cheloninae are solitary egg-larval koinobiont endoparasitoids of Lepidoptera. They play an important role as regulatory agents for phytophagous insect population dynamics, particularly the economically important insect pests (LASALLE & GAULD 1993; KAESLIN et al. 2005). The biology of this group has been reviewed by SHAW & HUDDLESTON (1991).

Two tribes of Cheloninae, Chelonini and Phanerotomini, are cosmopolitan (YU et al. 2012). Few studies have been conducted on the Cheloninae of Iran (LASHKARI BOD et al. 2011a, b; FARAHANI et al. 2012a, b; AMERI et al. 2012), their results were restricted to certain Iranian localities and have never been completely covering the whole of Iranian records. In some cases the Cheloninae records were partly included among studies concerning the whole family Braconidae (e.g. HEDWIG 1957; VAN ACHTERBERG 1980; AL-E MANSOUR & MOSTAFAVI 1993; VAN ACHTERBERG & MEHRNEJAD 2002; GHAHARI

et al. 2009a-d; GHAHARI et al. 2010a, b; LASHKARI BOD et al. 2010; GHAHARI & FISCHER 2011a, b, 2012; GHAHARI et al. 2012a, b; SAMIN et al. 2011). Additionally, FALLAHZADEH & SAGHAEI (2010) listed 102 species of Iranian Braconidae which Cheloninae included 24 species from 3 genera (*Ascogaster* with 2 species, *Chelonus* with 17 species, *Phanerotoma* with 5 species). The present work comprises a faunistic catalogue of the Cheloninae recorded from different localities of Iran. It includes 48 species belonging to 4 genera (*Ascogaster* WESMAEL, *Chelonus* PANZER, *Phanerotoma* WESMAEL and *Phanerotomella* SZÉPLIGETI) in two tribes: Chelonini and Phanerotomini.

## Materials and Methods

The published data on the subfamily Cheloninae from Iran are summarized. Classification of Chelonini follows YU et al. (2012) and for Phanerotomini we follow VAN ACHTERBERG (1990). Names of valid genera are listed alphabetically within tribes, and valid species names are listed alphabetically within genera. The following data are included: the valid taxa names, synonyms, host records, published records with provincial distribution (see Fig. 1), or when this information is not available - "Iran (no locality cited)" is given; and the general distribution.

## Species list

In the present study, a total of 48 species of the subfamily Cheloninae in four genera (including, *Ascogaster* WESMAEL, *Chelonus* PANZER, *Phanerotoma* WESMAEL and *Phanerotomella* SZÉPLIGETI) in two tribes (Chelonini and Phanerotomini) are listed as the fauna of Iran. The list of species is given below in an alphabetical order in each taxon.

### Family Braconidae NEES VON ESENBECK 1811

#### Subfamily Cheloninae FOERSTER 1862

#### Tribe Chelonini FOERSTER 1862

#### Genus *Ascogaster* WESMAEL 1835

*Ascogaster* WESMAEL 1835 - Nouv. Mém. Acad. Brux. 9: 226. Type: *Ascogaster instabilis* WESMAEL (Designated by FOERSTER 1862).

#### *Ascogaster bicarinata* (HERRICH-SCHÄFFER 1838)

*Chelonus bicarinatus* HERRICH-SCHÄFFER 1838 - Faunae Insect. German.: 154, ♀.

**Distribution in Iran:** Isfahan (GHAHARI et al. 2011c), Iran (no locality cited) (TELENGA 1941; TOBIAS 1976, 1986).

**Distribution outside Iran:** Azerbaijan, Croatia, Georgia, Hungary, Italy, Moldova, Romania, Serbia, Slovakia, Spain, Ukraine, former Yugoslavia (HUDDLESTON 1984; YU et al. 2012), Germany, Russia, Transcaucasia, U.K (SHENEFELT

1973; HUDDLESTON 1984; YU et al. 2012), Greece (HUDDLESTON 1984; PAPP 2007; YU et al. 2012), southern half of Europe (PAPP 2003a), Turkey (HUDDLESTON 1984; BEYARSLAN & INANÇ 1990; AYDOĞDU & BEYARSLAN 2007, 2012; YU et al. 2012).

**Host record:** *Archips rosana* (LINNAEUS) (Lepidoptera: Tortricidae) (AYDOĞDU & BEYARSLAN 2012).

#### ***Ascogaster caucasica* KOKUJEV 1895**

*Ascogaster caucasica* KOKUJEV 1895 - Trud. Russ. Ent. Obs. **29**: 82, ♀.

**Distribution in Iran:** Iran (no locality cited) (HUDDLESTON 1984).

**Distribution outside Iran:** Bulgaria, Croatia, Cyprus, Czech Republic, Georgia, Greece, Hungary, Romania, Spain, former Yugoslavia (YU et al. 2012), widespread in the southern half of Europe (PAPP 2003a), Turkey (BEYARSLAN & INANÇ 1990; AYDOĞDU & BEYARSLAN 2007, 2012; YU et al. 2012).

**Host record:** Unknown.

#### ***Ascogaster dispar* FAHRINGER 1934**

*Ascogaster dispar* FAHRINGER 1934 - Opusc. brac. **3**: 524, ♀, ♂.

**Distribution in Iran:** Iran (no locality cited) (HUDDLESTON 1984).

**Distribution outside Iran:** Austria, Britain, Bulgaria, Czech Republic, France, Greece, Hungary, Mongolia, Russia, Slovakia, Switzerland, former Yugoslavia (HUDDLESTON 1984; YU et al. 2012), Turkey (BEYARSLAN & INANÇ 1990; AYDOĞDU & BEYARSLAN 2012; YU et al. 2012).

**Host record:** *Endothenia gentianaeana* (HÜBNER) (Lepidoptera: Tortricidae) (HUDDLESTON 1984; YU et al. 2012), *Cydia delineaana* WALKER (Tortricidae) (YU et al. 2012).

#### ***Ascogaster quadridentata* WESMAEL 1835**

*Ascogaster quadridentata* WESMAEL 1835 - Nouv. Mém. Acad. Brux. **9**: 237, ♀, ♂.

**Distribution in Iran:** East Azarbaijan (RANJBAR AGHDAM & FATHIPOUR 2010), Kordestan (GHAHARI et al. 2010a).

**Distribution outside Iran:** Afrotropical (South Africa, introduced), Nearctic (USA), Neotropical (Peru, introduced), North Africa, Oriental (Pakistan) (SHENEFELT 1973), Belgium, Britain, Bulgaria, Czech Republic, France, Germany, Greece, Hungary, Italy, Japan, the Netherlands, Sweden, former Yugoslavia (HUDDLESTON 1984), Armenia, Austria, Azerbaijan, Canada, Croatia, Cyprus, Finland, Kazakhstan, Latvia, Lithuania, Macedonia, Madeira Islands, Moldova, New Zealand, Poland, Romania, Spain, Switzerland, Turkmenistan, Ukraine, Uzbekistan, Serbia, Australia (introduced) (YU et al. 2012), China, Taiwan (TANG & MARSH 1994), Egypt (EDMARDASH et al. 2011), Europe (Central, Southeast and Western), Mongolia, New Zealand (introduced) (WALKER & HUDDLESTON 1987), Korea (TANG & MARSH 1994; PAPP 2003a), Turkey (BEYARSLAN & INANÇ 1990; AYDOĞDU & BEYARSLAN 2012), Russia (Central, Northwest and South) (SHENEFELT 1973; HUDDLESTON 1984), Slovakia (HUDDLESTON 1984; YU et al. 2012).

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**Host record:** This species has been studied widely as a parasitoid of several economically important insect pests in Europe and North America (TANG & MARSH 1994). Its hosts and biology are reviewed by EVENHUIS & VLUG (1983), SHAW (1983), HUDDLESTON (1984) and WALKER & HUDDLESTON (1987). They recorded the following species as the hosts of *A. quadridentata*: *Cydia pomonella* (L.), *C. funebrana* (TREITSCHKE), *C. pallifrontana* (LIENIG & ZELLER), *C. nigricana* STEPH., *C. delineana* WALKER, *Epiblema uddmanniana* (L.), *Spilonota ocellana* (DENIS & SCHIFFERMÜLLER), *Grapholitha molesta* (BRUSCK), *G. apnmivora*, *Hedya nubifera* (Lepidoptera: Tortricidae), *Endopiza viteana* (CLEM.), *Yponomeuta padella* (L.) (Lepidoptera: Yponomeutidae). This species was also recorded to parasitize codling moth larvae (TOMKINS et al. 1987; WHARTON et al. 1998). BALEVSKI (1998) reported some sesiid moths as hosts to *A. quadridentata* (*Pandemis cerasana* (HÜBNER), *Lobesia botrana* (DENIS & SCHIFFERMÜLLER) and *Hedya nubiferana* HAWORTH). AYDOĞDU & BEYARSLAN (2007) reported incorrectly a number of hosts of *A. quadridentata* belonging to the following orders: Coleoptera (2 curculionid species), Diptera (1 anthomyiid and 1 clusiid species), Hymenoptera (2 cynipid and 1 tenthredinid species) and Lepidoptera (2 blastodaenid, 3 gelechiid, 2 geometrid, 1 limacodid, 3 pyralid, 34 tortricid and 3 yponomeutis species). Also, AYDOĞDU & BEYARSLAN (2012) reported *Archips rosana* (L.) (Lepidoptera: Tortricidae) as a host of this species. Parasitoid of codling moth, *Cydia pomonella* (L.) (Lepidoptera: Tortricidae) (RANJBAR AGHDAM & FATHIPOUR 2010).

### **Genus *Chelonus* PANZER 1806**

*Chelonus* JURINE 1801 in PANZER 1806: Intelligenztbl. Lit. - Ztg. 1: 164. Type: *Ichneumon oculator* FABRICIUS.

#### ***Chelonus (Chelonus) annulatus* (NEES VON ESENBECK 1816)**

*Sigalphus annulatus* NEES 1816 - Mag. Ges. nat. Fr. Berl. 7 (1813): 265, ♀.

**Distribution in Iran:** Guilan (GHAHARI et al. 2012a), Iran (no locality cited) (TELENGA 1941).

**Distribution outside Iran:** Belarus, Bulgaria, Canary Islands, Czech Republic, Finland, France, Georgia, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Lithuania, Moldova, Mongolia, Poland, Slovakia, Spain, Sweden, Switzerland, Ukraine, U.K (YU et al. 2012), Indonesia (SHENEFELT 1973), Russia (TOBIAS 2011; YU et al. 2012), Turkey (AYDOĞDU & BEYARSLAN 2007, 2011).

**Host record:** TOBIAS (2011) reported eight lepidopteran species belonging to the families Agonoxenidae, Oecophoridae, Psychidae, Yponomeutidae and Gelechiidae, as the hosts of *C. annulatus* (NEES). On the other hand, AYDOĞDU & BEYARSLAN (2007) reported nine lepidopteran species (Blastodaenidae, Gelechiidae, Oecophoridae, Psychidae, Tortricidae and Yponomeutidae) and (incorrectly) 2 dipteran species (Tephritidae) as the hosts of *C. annulatus* (NEES).

#### ***Chelonus (Chelonus) annulipes* WESMAEL 1835**

*Chelonus annulipes* WESMAEL 1835 - Nouv. Mém. Acad. Brux. 9: 221, ♀, ♂.

**Distribution in Iran:** Iran (no locality cited) (TELENGA 1941; TOBIAS 1976, 1986).

**Distribution outside Iran:** Afghanistan, Armenia, Azerbaijan, Belgium, Bulgaria, Canada, China, Croatia, Czech Republic, France, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, Latvia, Lithuania, Moldova, the Netherlands, Poland, Romania, Russia, Switzerland, Tajikistan, Turkmenistan, U.S.A., Ukraine, U.K, Uzbekistan, former Yugoslavia (YU et al. 2012), Puerto Rico (introduced), Guam (introduced) (SHENEFELT 1973), Turkey (LOZAN 2005).

**Host record:** *Ostrinia nubilalis* (HÜBNER) (VANCE 1932 as *Pyrausta nubilalis*; BALEVSKI 1998). AYDOĞDU & BEYARSLAN (2007) reported the following lepidopteran species as the hosts of *C. annulipes*: *Agrotis segetum*, *Eublemma pannonica*, *Heliothis virescens*, *Spodoptera exigua* (Lepidoptera: Noctuidae), *Ephestia kuehniella*, *Loxostege sticticalis*, *Ostrinia nubilalis* (Lepidoptera: Pyralidae) and *Cydia pomonella* (Lepidoptera: Tortricidae).

#### ***Chelonus (Chelonus) asiaticus* TELENGA 1941**

*Chelonus asiaticus* TELENGA 1941 - Fauna SSSR 5 (3): 276, 443, ♀, ♂.

**Distribution in Iran:** Golestan (GHAHARI et al. 2009d), Kermanshah (GHAHARI & FISCHER 2012).

**Distribution outside Iran:** Greece (PAPP 2003a), Hungary, Kazakhstan, Mongolia, Russia, Siberia, Slovakia (SHENEFELT 1973; TOBIAS 1986; PAPP 2003a), Turkey (AYDOĞDU & BEYARSLAN 2002).

**Host record:** This species was recorded as a larval parasitoid of *Oporopsamma wertheimsteini* (REBEL) (Lepidoptera: Tortricidae) (HASAN & WAPSHERE 1977).

#### ***Chelonus (Chelonus) bidens* TOBIAS 1972**

*Chelonus bidens* TOBIAS 1972 - Rev. Entom. USSR 55, ♀.

**Distribution in Iran:** Golestan (GHAHARI et al. 2010a), Lorestan (GHAHARI et al. 2012b), Mazandaran (GHAHARI et al. 2010a; GHAHARI & FISCHER 2011b; SAKENIN et al. 2012).

**Distribution outside Iran:** Former Czechoslovakia, Hungary, Russia, Ukrain (YU et al. 2012), Kazakstan (TOBIAS 1986; YU et al. 2012), Turkey (AYDOĞDU & BEYARSLAN 2002; YU et al. 2012).

**Host record:** Unknown.

#### ***Chelonus (Chelonus) breviventris* THOMSON 1874**

*Chelonus breviventris* THOMSON 1874 - Opusc. ent. 6: 568, ♀, ♂.

**Distribution in Iran:** Iran (no locality cited) (PAPP 1997; YU et al. 2012).

**Distribution outside Iran:** Austria, Croatia, Finland, Greece, Hungary, Jordan, Sweden, Turkey, former Yugoslavia (YU et al. 2012), Mongolia (SHENEFELT 1973).

**Host record:** Unknown.

***Chelonus (Chelonus) canescens* WESMAEL 1835**

*Chelonus canescens* WESMAEL 1835 - Nouv. Mém. Acad. Brux. 9: 224, ♀.

Distribution in Iran: East Azerbaijan (GHAHARI et al. 2009d).

Distribution outside Iran: Belgium, Czech Republic, France, Germany, Italy, Mongolia, Poland, Romania, Russia, Scotland, Slovakia, Spain, Sweden, Switzerland, U.K (SHENEFELT 1973), Turkey (AYDOĞDU & BEYARSLAN 2002).

Host record: *Cnephasia pasquana* HÜBNER (Lepidoptera: Tortricidae) (AYDOĞDU & BEYARSLAN 2007, 2011).

***Chelonus (Chelonus) carbonator* MARSHALL 1885**

*Chelonus carbonator* MARSHALL 1885 - Trans. R. ent. Soc. London 1885: 123, ♀, ♂.

Distribution in Iran: Isfahan (GHAHARI et al. 2011c).

Distribution outside Iran: Albania, Austria, Croatia, Czech Republic, England, Finland, Germany, Hungary, India, Italy, Mongolia, Poland, Romania, Russia, Siberia, Spain, Switzerland, former Yugoslavia (SHENEFELT 1973), China, France, Kazakhstan, Moldova, Slovakia, Slovenia, Tajikistan (YU et al. 2012), Greece (PAPP 2007), Japan (WATANABE 1937).

Host record: BALLARD (1921) reported *C. carbonator* MARSHALL as a parasitoid of *Spodoptera mauritia* (BOISDUVAL) (Lepidoptera: Noctuidae) in India. It was also reported as a parasitoid of *Spodoptera litura* F. (Lepidoptera: Noctuidae) (RAO & SATYANARAYANA 1984; YU et al. 2012). In Europe, it was reported as a parasitoid of the European corn borer, *Pyrausta nubilalis* (THOMSON 1928). Also, YU et al. (2012) reported *Cydia janthiana* (DUPONCHEL) (Lepidoptera: Tortricidae) as another host of this species.

***Chelonus (Chelonus) inanitus* (LINNÉ 1767)**

*Cynips inanita* LINNAEUS 1767 - Syst. nat. 1 (2): 919, ?

*Chelonus inanitus* NEES VON ESENBECK 1834 - Hym. Ich. Affin. Mon. 1: 299.

Distribution in Iran: Alborz (SHOJAI 1998), Isfahan (BAGHERI & BASIRI 2004), Kermanshah (GHAHARI & FISCHER 2012), Mazandaran (GHAHARI et al. 2009d), Tehran (MODARRES AWAL 1997), West Azerbaijan (ALIZADEH & JAVAN MOGHADDAM 2004; KHANJANI 2004, 2006), Iran (no locality cited) (AUBERT 1966; DAVATCHI & SHOJAI 1969; SHENEFELT 1973; KHANJANI 2004, 2006).

Distribution outside Iran: Albania, Algeria, Armenia, Belgium, Bulgaria, Canary Islands, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Korea, Latvia, Lithuania, Mongolia, the Netherlands, Norway, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.S.A. [introduced], United Kingdom, former Yugoslavia (SHENEFELT 1973), Turkey (KOHL 1905; BEYARSLAN 1985; BEYARSLAN et al. 2002a, b; AYDOĞDU & BEYARSLAN 2002, 2007, 2011), Japan (WATANABE 1937).

Host record: Solitary egg-larval parasitoid which lays its eggs into eggs of *Spodoptera littoralis* (Lepidoptera: Noctuidae) (TOMKINS et al. 1987; WHARTON et al. 1998) and *Spodoptera exigua* (MODARRES AWAL 1997; SHOJAI 1998; KHANJANI 2004); KHANJANI (2006) reported *Phthorimaea operculella* (ZELLER) (Lepidoptera:

Gelechiidae), *Agrotis segetum* (SCHIFF.) and *Spodoptera exigua* (Lepidoptera: Noctuidae) as the hosts of *C. inanitus* (L.). AYDOĞDU & BEYARSLAN (2007, 2011) reported 16 lepidopteran species (Noctuidae, Phycitidae, Pyralidae, Pyraustidae and Tortricidae) as the hosts of *Chelonus inanitus* (L.). This species was also reported as a parasitoid of *Etiella zinckenella* (TREITSCHKE) (Pyralidae) (BALEVSKI 1998). WATANABE (1937) reported *C. inanitus* as the parasitoid of a number of hosts in Japan including, *Oligia literosa* HOWARD, *Longalatedes elymi* TREITSCHKE, *Sesamia aemulana* SCHÄGFFER and *S. tripoliana* BARRETT (Lepidoptera: Noctuidae).

#### ***Chelonus (Chelonus) iranicus* TOBIAS 1972**

*Chelonus iranicus* TOBIAS 1972 - Trud. V. Ent. Obsh. **55**: 284-299, ♀.

Distribution in Iran: Iran (no locality cited) (TOBIAS 1972).

Distribution outside Iran: Endemic to Iran.

Host record: Unknown.

#### ***Chelonus (Chelonus) medus* TELENGA 1941**

*Chelonus medus* TELENGA 1941 - Fauna SSSR **5** (3): 253, 441, ♀.

Distribution in Iran: Sistan & Baluchestan (TELENGA 1941).

Distribution outside Iran: Iraq (SHENEFELT 1973), Turkmenistan (TELENGA 1941; PAPP 1993).

Host record: Unknown.

#### ***Chelonus (Chelonus) microsomus* TOBIAS 1964**

*Chelonus microsomus* TOBIAS 1964 - Trudy zool. Inst. Leningr. **34**: 189, ♀.

Distribution in Iran: Golestan (GHAHARI & FISCHER 2011b; SAKENIN et al. 2012), Mazandaran (GHAHARI et al. 2010a), Northern Iran (no locality cited) (SAKENIN et al. 2011).

Distribution outside Iran: Kazakhstan, Uzbekistan (TOBIAS 1964, 1986), Russia (SHENEFELT 1973), Turkey (AYDOĞDU & BEYARSLAN 2002).

Host record: Unknown.

#### ***Chelonus (Chelonus) ocellatus* ALEXEEV 1971**

*Chelonus ocellatus* ALEXEEV 1971 - Ent. Rev. **50**: 234, ♀, ♂.

Distribution in Iran: Kermenshah (GHAHARI & FISCHER 2012), Mazandaran (GHAHARI et al. 2010a; GHAHARI & FISCHER 2011b; SAKENIN et al. 2012).

Distribution outside Iran: Crimea, Middle Asia (AYDUGDO & BEYARSLAN 2002), Hungary, Slovakia, Ukraine (YU et al. 2012), Turkey (AYDUGDO & BEYARSLAN 2002; YU et al. 2012), Turkmenistan (ALEXEEV 1971; YU et al. 2012).

Host record: Unknown.



***Chelonus (Chelonus) oculator* (FABRICIUS 1775)**

*Ichneumon oculator* PANZER 1779 - Faunae Insect. German.: 72, ♀, ♂.

*Sigalphus oculator* LATREILLE 1809 - Genera Crust. Insect. 4: 13, ♀, ♂.

*Chelonus oculator* PANZER 1906 - Krit. Rev. Insekt. Dtls.: 99.

**Distribution in Iran:** Lorestan (GHAHARI et al. 2012b), Iran (no locality cited) (TELENGA 1941; TOBIAS 1976, 1986).

**Distribution outside Iran:** Albania, Austria, Belgium, Caucasia, Central Asia, Czech Republic, Finland, France, England, Germany, Holland, Hungary, Italy, North Africa, Romania, Russia, Siberia, Slovakia, Switzerland, West Asia (TOBIAS 1986), Egypt (EDMARDASH et al. 2011), Turkey (ÖZKAN & ÖZMEN 2001; AYDOĞDU & BEYARSLAN 2002, 2007, 2011; BEYARSLAN et al. 2002a, b, 2006; LOZAN 2005).

**Host record:** This species was recorded as an egg-larval parasitoid on *Spodoptera littoralis* (BOISDUVAL) (Lepidoptera: Noctuidae) and *Ephestia kuehniella* ZELLER (Lepidoptera: Pyralidae) (ÖZKAN & ÖZMEN 2001). It was also reported as parasitoid of *Spodoptera exigua* (HÜBNER) (VIDAL 1997), *Agrotis segetum* DENIS & SCHIFFERMÜLLER, *Helcoverpa armigera* HÜBNER, *Heliothis virescens* HUFNAGEL, *H. peltigera* DENIS & SCHIFFERMÜLLER, *Photodes elymi* TREITSCHKE (Lepidoptera: Noctuidae), *Etiella zinckenella* (TREITSCHKE) (Lepidoptera: Pyralidae), *Pyrausta sticticalis* (Lepidoptera: Pyraustidae), *Coleophora anatipennella* (HÜBNER) (Lepidoptera: Coleophoridae), *Zeiraphera insertana* (FABRICIUS) (Lepidoptera: Tortricidae) (TOBIAS 1995; AYDOĞDU & BEYARSLAN 2007, 2011); *Ephestia kuehniella* ZELLER, *Etiella zinckenella* (TREITSCHKE), *Homoeosoma nebulella* (DENIS & SCHIFFERMÜLLER), *Loxostege sticticalis* (L.), *Ostrinia nubilalis* (HÜBNER) (Lepidoptera: Pyralidae) (AYDOĞDU & BEYARSLAN 2007). ÖZKAN (2006) recorded *C. oculator* as an egg-larval parasitoid of the factitious host *Plodia interpunctella* (HÜBNER) (Lepidoptera: Pyralidae). It was recorded on *Cydia corticana* HÜBNER (Tortricidae), *Chortodes elymi* (TREITSCHKE), *Leucania loreyi* (DUPONCHEL) (Lepidoptera: Noctuidae) (YU et al. 2012).

***Chelonus (Chelonus) productus* HERRICH-SCHÄFFER 1838**

*Chelonus productus* HERRICH-SCHÄFFER 1838 - Regensburg 154, ?.

**Distribution in Iran:** Isfahan (GHAHARI et al. 2011c), Iran (no locality cited) (YU et al. 2012).

**Distribution outside Iran:** Cyprus, Germany, Hungary, Mongolia, Romania (YU et al. 2012), Greece (PAPP 2007; YU et al. 2012).

**Host record:** Unknown.

***Chelonus (Chelonus) scabrator* (FABRICIUS 1793)**

*Ichneumon scabrator* FABRICIUS 1793 - Ent. Syst. II: 174.

*Sigalphus scabrator* LATREILLE 1809 - Gen. Crust. U. Insect., 13.

*Sigalphus scaber* NEES VON ESENBECK 1813 - Mag. Ges. Naturf. Fr. Berlin VII: 272.

*Chelonus scabrator* TRENTPEHL 1825 - Revis. Crit. Gen. Ichneumon.

**Distribution in Iran:** Guilan (GHAHARI et al. 2009d), Iran (no locality cited) (SHENEFELT 1973).

**Distribution outside Iran:** Albania, Austria, Belgium, Czech



Republic, Finland, France, England, Germany, Holland, Hungary, Italy, Mongolia, Poland, Russia, Siberia, Slovakia, Sweden, Switzerland, former Yugoslavia (SHENEFELT 1973), Turkey (AYDOĞDU & BEYARSLAN 2002, 2007, 2011; BEYARSLAN et al. 2002b, 2006; LOZAN 2005).

**Host record:** Four species including, *Oligia strigilis* (L.) (Lepidoptera: Noctuidae), *Loxostege sticticalis* L. (Lepidoptera: Pyralidae), *Cydia fractifasciana*, and *Rhopobota stagnana* (Lepidoptera: Tortricidae) were reported as the hosts of *C. scabrator* (SHENEFELT 1973; AYDOĞDU & BEYARSLAN 2007). Also, AYDOĞDU & BEYARSLAN (2011) recorded five lepidopteran species belonging to four families including, Noctuidae, Pyralidae, Pyraustidae and Tortricidae as the hosts of *C. scabrator* (FABRICIUS).

### ***Chelonus (Chelonus) setaceus* PAPP 1993**

*Chelonus setaceus* PAPP 1993 - Annls. hist.-nat. Mus. natn. hung. **85**: 166, ♀, ♂.

**Distribution in Iran:** Tehran (PAPP 1993).

**Distribution outside Iran:** Endemic to Iran.

**Host record:** Unknown.

### ***Chelonus (Chelonus) smirnovi* TELENGA 1953**

*Chelonus smirnovi* TELENGA 1953 - Zool. Zh. **32**: 1176, ♀, ♂.

**Distribution in Iran:** Lorestan (GHAHARI et al. 2012b), Iran (no locality cited) (TOBIAS 1976).

**Distribution outside Iran:** Mongolia (YU et al. 2012), Russia (SHENEFELT 1973; TOBIAS 1986, 2011), Turkmenistan (TOBIAS 1986), Turkey (AYDOĞDU & BEYARSLAN 2002).

**Host record:** *Etiella zinckenella* (TREITSCHKE) (Lepidoptera: Tortricidae) (SHENEFELT 1973; AYDOĞDU & BEYARSLAN 2007).

### ***Chelonus (Chelonus) szepligetii* DALLA TORRE 1898**

*Chelonus szepligetii* DALLA TORRE 1898 - Cat. Hym. **4**: 208, replacement name.

**Distribution in Iran:** Khorasan (SAMIN et al. 2011), Kermanshah (GHAHARI & FISCHER 2012).

**Distribution outside Iran:** Azerbaijan, Croatia, Hungary, Turkey, former Yugoslavia (SHENEFELT 1973; YU et al. 2012).

**Host record:** Unknown.

### ***Chelonus (Microchelonus) areolatus* CAMERON 1906**

*Chelonus areolatus* CAMERON 1906 - J. Bomb. nat. Hist. Soc. **17**: 103, '♀' = ♂.

**Distribution in Iran:** Iran (no locality cited) (SHENEFELT 1973; PAPP 1996).

**Distribution outside Iran:** Pakistan, Turkmenistan (SHENEFELT 1973).

**Host record:** Unknown.

1930

***Chelonus (Microchelonus) basalis* CURTIS 1837**

*Chelonus basalis* CURTIS 1837 - Br. Ent. **14**: 672, ♀.

**Distribution in Iran**: Iran (no locality cited) (TELENGA 1941).

**Distribution outside Iran**: Czech Republic, Sweden (LOZAN & TOBIAS 2002; LOZAN et al. 2010), Denmark (TOBIAS 2001, 2003; LOZAN & TOBIAS 2002; LOZAN et al. 2010), Egypt (SZÉPLIGETI 1908), England, Finland, Germany, Hungary, Israel, Kazakhstan, Russia, Sweden (TELENGA 1941).

**Host record**: Unknown.

***Chelonus (Microchelonus) cisapicalis* TOBIAS 1989**

*C. (M.) cisapicalis* TOBIAS 1989 - Nas. Mongolii **10**, ?

**Distribution in Iran**: Guilan (GHAHARI et al. 2012a).

**Distribution outside Iran**: Mongolia, Russia (PAPP 2009; YU et al. 2012).

**Host record**: Unknown.

***Chelonus (Microchelonus) contractus* (NEES VON ESENBECK 1816)**

*Sigalphus contractus* NEES (1813) 1816 - Mag. Ges. nat. Fr. Berl. **7**: 274, ♀.

**Distribution in Iran**: Fars (LASHKARI BOD et al. 2011a, b), Tehran (FARAHBAKHS 1961; MODARRES AWAL 1997).

**Distribution outside Iran**: Armenia, Azerbaijan, Belgium, Bosnia-Herzegovina, Bulgaria, Czech Republic, Finland, France, Germany, Greece, Hungary, Italy, Kazakhstan, Korea, Lithuania, Mongolia, the Netherlands, Poland, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkmenistan, Ukraine, U.K, former Yugoslavia (SHENEFELT 1973; YU et al. 2012), Turkey (LOZAN 2005).

**Host record**: TOBIAS & SHAW (2005) reported the larvae of *Anthophila fabriciani* (L.) (Lepidoptera: Choreutidae) and the cocoons of *Prochoreutis mytterrana* (FABRICIUS) (Lepidoptera: Choreutidae), and some other microlepidopteran species belonging to different families including, Gelechiidae, Simaethidae, Arejyresthiidae, Coleophoridae, Tortricidae, Tischeriidae, Plutellidae, Choreutidae and Cosmopterigidae as the hosts of *C. contractus*. Also, BEHDAD (1991) and MODARRES AWAL (1997) reported this species as a parasitoid of *Scorbipalpa ocellatella* (BOYD) (Lepidoptera: Gelechiidae) in Iran.

***Chelonus (Microchelonus) depressus* THOMSON 1874**

*Chelonus depressus* THOMSON 1874 - Opusc. ent. **6**: 576, ♀, ♂.

**Distribution in Iran**: Iran (no locality cited) (DAVATCHI & SHOJAI 1969; JAFARIPOUR 1969).

**Distribution outside Iran**: Finland, Sweden (SHENEFELT 1973; PAPP 1990), Turkey (AYDOĞDU & BEYARSLAN 2006).

**Host record**: LABEYRIE (1960) reported *Acrolepiopsis assectella* (ZELLER) (Lepidoptera: Acrolepiidae) as a host of *C. depressus* Thomson. According to YU et al. (2012), *Phthorimaea operculella* (ZELLER) (Lepidoptera: Gelechiidae) as another host of this species.

***Chelonus (Microchelonus) erythrogaster* (LUCAS 1846)**

*Microchelonus erythrogaster* LUCAS 1846 - Explor. Scient. Alg. 3: 340, ♂.

Distribution in Iran: Fars (LASHKARI BOD et al. 2011a, b).

Distribution outside Iran: Algeria, Tunisia (TOBIAS 1972, 2001; LASHKARI BOD et al. 2011a, b), Croatia, Italy; (LASHKARI BOD et al. 2011), Russia, Dalmatia (now Croatia) (SHENEFELT 1973), Turkey (BEYARSLAN 1985).

Host record: *Diaperis boleti* LINNAEUS (Coleoptera: Tenebrionidae) (SHENEFELT 1973, incorrectly attributed host).

***Chelonus (Microchelonus) incisus* (TOBIAS 1986)**

*Microchelonus incisus* TOBIAS 1986 - Faune SSSR': 145.

Distribution in Iran: Guilan (GHAHARI et al. 2012a).

Distribution outside Iran: Hungary, Mongolia, Russia (YU et al. 2012).

Host record: Unknown.

***Chelonus (Microchelonus) iranicus* (TOBIAS 2001)**

*Microchelonus iranicus* TOBIAS 2001 - Entomol. Rev. **80** (2): 151, 152.

Distribution in Iran: Iran (no locality cited) (TOBIAS 2001).

Distribution outside Iran: Endemic to Iran.

Host record: Unknown.

***Chelonus (Microchelonus) kermakiae* (TOBIAS 2001)**

*Microchelonus kermakiae* TOBIAS 2001 - Entomol. Rev. **80**(2): 28, ♀, ♂.

Distribution in Iran: Kerman (VAN ACHTERBERG & MEHRNEJAD 2002; MEHRNEJAD 2009; MEHRNEJAD & BASIRAT 2009). It was also recorded throughout the pistachio growing areas in Iran (MEHRNEJAD & BASIRAT 2009).

Distribution outside Iran: Kyrgyzstan (TOBIAS 2001).

Host record: The pistachio twig borer moth, *Kermania pistaciella* AMSEL (Lepidoptera: Tineidae) (VAN ACHTERBERG & MEHRNEJAD 2002; MEHRNEJAD 2009; MEHRNEJAD & BASIRAT 2009).

***Chelonus (Microchelonus) mongolicus* (TELENGA 1941)**

*Chelonella mongolica* TELENGA 1941 - Fauna Hymenoptera **5**.

Distribution in Iran: Guilan (GHAHARI et al. 2012a).

Distribution outside Iran: Mongolia, Russia (PAPP 2009; YU et al. 2012).

Host record: Unknown.

***Chelonus (Microchelonus) mucronatus* THOMSON 1874**

*Chelonus mucronatus* THOMSON 1874 - Opusc. ent. **6**: 578, ♀.

Distribution in Iran: Ilam (GHAHARI et al. 2010b).

Distribution outside Iran: Hungary, Russia, Sweden, Turkey, Ukraine (YU et al. 2012).

Host record: Pupae of *Syrphus* sp. (Diptera: Syrphidae) (SHENEFELT 1973).

***Chelonus (Microchelonus) subcontractus* ABDINBEKOVA 1971**

*Chelonus subcontractus* ABDINBEKOVA 1971 - Entomol. Rev. **50**: 221-228.

Distribution in Iran: Tehran (Abbasipour et al. 2012).

Distribution outside Iran: Azerbaijan (ABDINBEKOVA 1971 as *Chelonus subcontractus*; YU et al. 2012), western half of the former USSR, Georgia, Kazakhstan, Lithuania, Moldova, Poland, Romania, Slovakia, Ukraine (YU et al. 2012), Greece (PAPP 2003b), Hungary (PAPP 2003b; AYDOĞDU & BEYARSLAN 2006), Mongolia (AYDOĞDU & BEYARSLAN 2006; PAPP 2009; YU et al. 2012), Serbia (PAPP 2010; YU et al. 2012), Turkey (AYDOĞDU & BEYARSLAN 2006; YU et al. 2012).

Host records: *Volcaniella extremella* (WOCKE) (Lepidoptera: Cosmopterygidae), *Elachista* sp. (Lepidoptera: Elachistidae) (AYDOĞDU & BEYARSLAN 2006), *Scrobipalpa ocellatella* BOYD (Lepidoptera: Gelechiidae) (ABBASIPOUR et al. 2012).

***Chelonus (Microchelonus) telengai* (ABDINBEKOVA 1965)**

*Neochelonella telengai* ABDINBEKOVA 1965 - Dokl. Akad. Nauk Azerb. SSR **21**(4): 61-64.

Distribution in Iran: Iran (no locality cited) (ABDINBEKOVA 1965; TOBIAS 1976, 1986, 2001).

Distribution outside Iran: Armenia, Azerbaijan (ABDINBEKOVA 1965; TOBIAS 2001; YU et al. 2012).

Host record: Unknown.

***Chelonus (Parachelonus) pellucens* (NEES VON ESENBECK 1816)**

*Chelonus alboannulatus* SZÉPLIGETI 1896 - Termesz. Fuz. **19**: 271, ♀, ♂.

Distribution in Iran: Guilan (GHAHARI & FISCHER 2011b as *C. varimaculatus* TOBIAS; SAKENIN et al. 2012 as *C. varimaculatus*), West Azarbaijan (GHAHARI & FISCHER 2011a; GHAHARI et al. 2012b), Northern Iran (no locality cited) (SAKENIN et al. 2011).

Distribution outside Iran: Armenia, Azerbaijan, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Serbia, Spain, Switzerland, Turkey, Ukraine, U.K., Uzbekistan, former Yugoslavia (YU et al. 2012).

Host records: YU et al. (2012) reported the following species of Sesiidae (Lepidoptera) as the hosts of *C. pellucens*: *Bembecia hungarica* (TOMOLA), *B.*

1933

*ichneumoniformis* (DENIS & SCHIFFERMÜLLER), *B. scopigera* (SCOPOLI), *Chamaesphecia euceraeformis* (OCHSENHEIMER) and *C. tenthrediniformis* (DENIS & SCHIFFERMÜLLER).

### **Tribe P h a n e r o t o m i n i BAKER 1926**

**C o m m e n t s :** Checklist of Iranian Phanerotomini included 10 species was prepared by AMERI et al. (2012) together with identification key.

### **Genus *Phanerotoma* WESMAEL 1838**

*Phanerotoma* WESMAEL 1838 - Nouv. Mém. Acad. Brux. 11: 165. Type: *Chelonus dentatus* PANZER (designated by HALIDAY 1840).

### ***Phanerotoma (Bracotritoma) parva* KOKUJEV 1903**

*Phanerotoma parva* KOKUJEV 1903 - Russk. Entomol. Obozr. 3: 285, ♀.

**D i s t r i b u t i o n i n I r a n :** Fars (AL-E MANSOUR & MOSTAFAVI 1993; MODARRES AWAL 1997).

**D i s t r i b u t i o n o u t s i d e I r a n :** Central Asia, Libya (SHENEFELT 1973), Cyprus, Greece, Siberia (VAN ACHTERBERG 1990); Eastern and Western Palearctic, Turkey (AYDOĞDU & BEYARSLAN 2009), Mongolia, Russia (SHENEFELT 1973; VAN ACHTERBERG 1990).

**H o s t r e c o r d :** Unknown.

### ***Phanerotoma (Bracotritoma) permixtella* FISCHER 1968**

*Phanerotoma permixtella* FISCHER 1968 - Pflanzenschutzberichte 37: 107, ♀, ♂.

**D i s t r i b u t i o n i n I r a n :** Hormozgan (AMERI et al. 2012), West Azarbaijan (GHAHARI & Fischer 2011a; GHAHARI et al. 2012b).

**D i s t r i b u t i o n o u t s i d e I r a n :** Greece (VAN ACHTERBERG 1990; PAPP 2003a), Syria (FISCHER 1968 as *Phanerotoma olearia* FISCHER; SHENEFELT 1973; VAN ACHTERBERG 1990; PAPP 2003a), Turkey (AYDOĞDU & BEYARSLAN 2009).

**H o s t r e c o r d :** *Cacochroa permixtella* (HERRICH-SCHÄFFER) (Lepidoptera: Oecophoridae) on olive tree (SHENEFELT 1973; VAN ACHTERBERG 1990), *Recurvaria pistaciicola* (DANIFLEVSKII) (Lepidoptera: Gelechiidae) (AYDOĞDU & BEYARSLAN 2009).

### ***Phanerotoma (Phanerotoma) acuminata* SZÉPLIGETI 1908**

*Phanerotoma acuminata* SZÉPLIGETI 1908 - Annls. hist.-nat. Mus. natn. hung. 6: 410, ♀.

**D i s t r i b u t i o n i n I r a n :** Alborz, Tehran (FARAHANI et al. 2012b), Guilan (FARAHANI et al. 2012a).

**D i s t r i b u t i o n o u t s i d e I r a n :** Austria, Azerbaijan, Crimea, Czech Republic, England, France, Germany, Italy, Mongolia, Montenegro, the Netherlands, Romania, Serbia, Slovakia (VAN ACHTERBERG 1990; PAPP 2009; ŽIKIĆ et al. 2010; YU et al. 2012), North America (ZETTEL 1992), Turkey (PAPP 1994; BEYARSLAN et al. 2002a; AYDOĞDU & BEYARSLAN 2009).

1934

**Host record:** This species has been reported as a parasitoid of the clover-hay-worm moth *Hypsopygia costalis* FABRICIUS (Lepidoptera: Pyralidae) (YU et al. 2012).

***Phanerotoma (Phanerotoma) fracta* KOKUJEV 1903**

*Phanerotoma fracta* KOKUJEV 1903 - Russk. ént. Obozr. **3**: 285, ♀, ♂.

**Distribution in Iran:** Sistan & Baluchestan (HEDWIG 1957), Iran (no locality cited) (SHENEFELT 1973; VAN ACHTERBERG 1990).

**Distribution outside Iran:** Austria, Czech Republic, Slovakia, France, Greece, Hungary, Italy, Spain, USA (introduced in California) (VAN ACHTERBERG 1990), Mongolia, Siberia (SHENEFELT 1973).

**Host record:** Common parasitoid of *Etiella zinckenella* TREITSCHKE (Lepidoptera: Pyralidae) (VAN ACHTERBERG 1990).

***Phanerotoma (Phanerotoma) katkowi* KOKUJEV 1900**

*Phanerotoma katkowi* KOKUJEV 1900 - Trudy russ. ént. Obshch. **34**: 30, ♀.

**Distribution in Iran:** Fars (AL-E MANSOUR & MOUSTAFAVI 1993; MODARRES AWAL 1997).

**Distribution outside Iran:** Albania, Israel, Kazakhstan, Mongolia (YU et al. 2012), Russia, Siberia (SHENEFELT 1973).

**Host record:** Unknown.

***Phanerotoma kozlovi* SHESTAKOV 1930**

*Phanerotoma kozlovi* SHESTAKOV 1930 - Ent. Obozr. **24**: 103, ♀.

**Distribution in Iran:** Hormozgan (AMERI et al. 2012).

**Distribution outside Iran:** Afghanistan, Azerbaijan, China, Kazakhstan, Turkmenistan (Yu et al. 2012), Caucasia, Central Asia (VAN ACHTERBERG 1990), Mongolia (VAN ACHTERBERG 1990; YU et al. 2012).

**Host record:** Unknown.

***Phanerotoma (Phanerotoma) leucobasis* KRIECHBAUMER 1894**

*Phanerotoma leucobasis* KRIECHBAUMER 1894 - Berl. ent. Z. **39**: 62, ♀.

**Distribution in Iran:** Isfahan (SOBHANI et al. 2012), Iran (no locality cited) (Shenefelt 1973 as *Phanerotoma hispanica* var. *desertorum* HEDWIG 1957; BEHDAD 1991, MODARRES AWAL 1997, VAN ACHTERBERG 1990 as *P. ocularis* KOHL 1906).

**Distribution outside Iran:** Egypt, Ethiopia, Kenya, Madagascar, Nigeria, Oceanic regions, S.W. Africa, Saudi Arabia, Socotra, Somalia, Tanzania, Togo (SHENEFELT 1973; VAN ACHTERBERG 1990; AYDOĞDU & BEYARSLAN 2009).

**Host record:** VAN ACHTERBERG (1990) reported four pyralid and one gelechiid species (Lepidoptera) as the hosts of *P. leucobasis* (as *Ph. ocularis*). On the other hand AYDOĞDU & BEYARSLAN (2009) reported Gelechiidae and Noctuidae as the hosts of this species. It was reported as larval parasitoid of *Batrachedra amydraula* (Lepidoptera:

1935

Cosmopteritidae) (BEHDAD 1991; MODARRES AWAL 1997 as *P. ocularis* KOHL 1906), *Plodia interpunctella* (MODARRES AWAL 1997), *Ectomyelois ceratoniae* ZELLER (Lepidoptera: Pyralidae) (SOBHANI et al. 2012).

***Phanerotoma (Bracotritoma) masiana* FAHRINGER 1934**

*Phanerotoma masiana* var. *masiana* FAHRINGER 1934 - Opusc. brac. **3** (5-8): 573, "♀" (incorrect ♂).

Distribution in Iran: Fars (AL-E MANSOUR & MOSTAFAVI 1993; MODARRES AWAL 1997).

Distribution outside Iran: Egypt (VAN ACHTERBERG 1990; EDMARDASH et al. 2011), Libya (SHENEFELT 1973; VAN ACHTERBERG 1990), Saudi Arabia (VAN ACHTERBERG 1990).

Host record: Unknown.

***Phanerotoma (Phanerotoma) minuta* KOKUJEV 1903**

*Phanerotoma minuta* KOKUJEV 1903 - Russk. Entomol.Oboz. **3**: 286, ♀.

Distribution in Iran: Sistan & Baluchestan (FARAHANI et al. 2012a).

Distribution outside Iran: Azerbaijan, China, Mongolia (YU et al. 2012), Central Asia, Kazakhstan, Turkmenia (Transcaspia) (VAN ACHTERBERG 1990).

Host record: Unknown.

***Phanerotoma rufescens* (LATREILLE 1809)**

*Sigalphus rufescens* LATREILLE 1809 - Gen. Crust. Insect: 13.

Distribution in Iran: Hormozgan (AMERI et al. 2012).

Distribution outside Iran: Austria, Egypt, Romania, U.K. (EDMARDASH et al. 2011; YU et al. 2012), Belgium, Czech Republic, Slovakia (VAN ACHTERBERG 1990; EDMARDASH et al. 2011; YU et al. 2012), France, Hungary, the Netherlands (VAN ACHTERBERG 1990).

Host record: Unknown.

***Phanerotoma (Phanerotoma) syleptae* ZETTEL 1990**

*Phanerotoma syleptae* ZETTEL 1990 - Staatl. Mus. Tierk. Dresden **27** (28): 152, ♀, ♂.

Distribution in Iran: Tehran (Varamin) (ZETTEL 1990a).

Distribution outside Iran: Burma, India, Indonesia, Sri Lanka, Thailand (ZETTEL 1990a, b).

Host record: *Diaphana indica* (SAUNDERS) (Lepidoptera: Crambidae), *Eutectona machaeralis* (WALKER) (Lepidoptera: Pyralidae), *Syleptae derogate* (FABRICIUS) (Lepidoptera: Crambidae) (ZETTEL 1990a).

**Genus *Phanerotomella* SZÉPLIGETI 1900**

*Phanerotomella* SZÉPLIGETI 1900 - Természetr. Fü. **23**: 59. Type: *Phanerotomella longipes* SZÉPLIGETI 1904 - Genera Insect. **22**:101 (designated by VIERECK 1914).



### ***Phanerotomella rufa* (MARSHALL 1898)**

*Phanerotoma rufa* MARSHALL 1898 in ANDRÉ - Spec. Hym. Eur. Alg. 5 bis: 172, ♀.

**Distribution in Iran:** Alborz, Tehran (FARAHANI et al. 2012a), Guilan (FARAHANI et al. 2012b), Hormozgan (AMERI et al. 2012).

**Distribution outside Iran:** Austria, Greece, Hungary, Italy, Moldova, former Yugoslavia (VAN ACHTERBERG 1990; YU et al. 2012), Croatia, Italy (SHENEFELT 1973), Turkey (ZETTEL 1989; VAN ACHTERBERG 1990; BEYARSLAN & INANÇ 1990; BEYARSLAN et al. 2002a, b; AYDOĞDU & BEYARSLAN 2009).

**Host record:** Parasitoid of clover hay-worm moth, *Hypsopygia costalis* FABRICIUS 1775 (Lepidoptera: Pyralidae) (YU et al. 2012).

### **Discussion**

In the present study, 48 species of Cheloninae have been recorded from Iran so far. Among the four genera of Iranian Cheloninae (*Ascogaster*, *Chelonus*, *Phanerotoma*, *Phanerotomella*), *Chelonus* with 31 species is the most diverse. Almost the conducted researches on the fauna of Iranian Cheloninae were made in north and northwestern Iran (see references) while Iran is a large country with various geographical regions. If the surveys are continued in other unsampled areas especially south and eastern Iran, surely some other species will be discovered. Also, almost conducted surveys on Iranian Cheloninae were made only on the basis of collecting the materials by different methods exception rearing of hosts. This is the reason of unknown hosts for almost Iranian Cheloninae species, so the faunistic surveys on Iranian Cheloninae must be continued through the collecting and rearing their hosts, lepidopteran larvae. Determining of parasitoids' hosts is one of the most important steps in biological control programs (GODFRAY 1994; BELLOWES & FISCHER 1999). Since the members of Cheloninae are the egg-larval koinobiont endoparasitoids of Lepidoptera (LASALLE & GOLD 1993), they can have efficient role in biological control programs of agricultural and forest pests.

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### **Zusammenfassung**

Vorliegende Arbeit bringt einen Katalog der iranischen Cheloninae (Hymenoptera: Braconidae), basierend auf den bisher publizierten Daten. 48 Arten der 4 Gattungen *Ascogaster* WESMAEL (4 Arten), *Chelonus* PANZER (32 Arten), *Phanerotoma* WESMAEL (11 Arten) und *Phanerotomella* SZÉPLIGETI (1 Art) aus drei Triben (Chelonini und Phanerotomini) wurden angeführt. Folgende drei Arten scheinen endemische Elemente der iranischen Fauna zu sein: *Chelonus* (*Chelonus*)

*iranicus* TOBIAS, *Chelonus* (*Chelonus*) *setaceus* PAPP und *Chelonus* (*Microchelonus*) *iranicus* TOBIAS. Eine faunistische Liste mit Synonymen, Wirtsangaben und Verbreitungsangaben wird dargestellt.

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